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ABSTRACT

This is an evaluation report on the 1979-1980 school year activities of a Title VII program entitled Systematic Approaches to Bilingual Education (SABE) that served Spanish speaking students in grades 1-5 in New York City. The report provides information on: (1) program goals and administration; (2) site selection; (3) program activities; and (4) staff development and staff experience. Findings from site visits, field interviews, and teacher/paraprofessional questionnaires are summarized. Testing procedures for students are outlined and tables are provided which show student performance on tests measuring English, Spanish and mathematics achievement. Pre- and post-test comparisons are also given. Conclusions from the evaluation and recommendations for program improvement are offered at the report's end. (APM)

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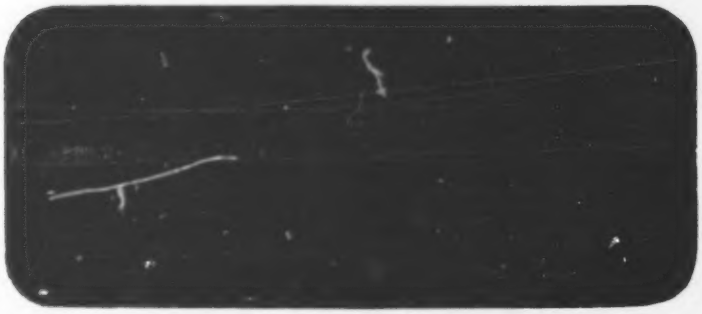

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Office of Educational Evaluation
New York City Public Schools
110 Livingston Street
Brooklyn, New York 11201

FINAL EVALUATION REPORT

ESEA Title VII

Grant Number: G007604866

Project Number: 5001-42-07647

PROJECT SABE

1979-1980

PROJECT DIRECTOR:
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PROJECT SABE:
Systematic Approaches to Bilingual Education

Project Director:	Lisandro Garcia-Marchi
Administrative Office:	131 Livingston Street Brooklyn, New York 11201
Year of Operation:	1979-1980, Fourth Year of a Five Year Cycle
Number of Participants:	Approximately 978 in Grades K-5, 807 Spanish dominant and 171 English dominant
Participating Sites:	Community School Districts 4M, 7X, and 12X, and one non-public school. A total of 6 schools participate.

I. INTRODUCTION

This report is based upon the 1979-80 school year activities of the project entitled Systematic Approaches to Bilingual Education (SABE). Project SABE was originally funded in the 1976-77 fiscal year under provisions of Title VII of the Elementary and Secondary Education Act (ESEA). With the completion of current year project activities, the fourth year of a five-year funding cycle is concluded.

Bilingual Education was established as a separate administrative unit of the Board of Education of the City of New York in 1972, and was charged with the development of comprehensive bilingual education programs. Originally the Center for Bilingual Education was a major unit of the Board of Education's Division of Educational Planning and Support. However, because of the growth of the number of students served by its programs, the status of the Center for Bilingual Education was changed in May of 1979.

The unit is now known as the Office of Bilingual Education and it reports directly to the Chancellor of the Board of Education.

Project SABE is a centrally-based program operating as a unit of the Office of Bilingual Education and in collaboration with three decentralized community school districts (CSDs): CSD 4 in Manhattan and CSD's 7 and 12 in the Bronx. During the past year, Project SABE served a total of 978 students in five community schools (public) and in one non-public school. The majority of student participants (N=807) were of limited English speaking proficiency (LEP) and were Spanish dominant. The remaining students (N=171) were English dominant. All students served were enrolled in grades K-5 in schools that met the socio-economic and academic achievement criteria established by Title I of ESEA.

Project SABE is designed to provide both supportive services to students and professional in-service training for participating classroom teachers and paraprofessionals. During the past year, the Title VII program staff consisted of one director, one assistant director, one clerical assistant, 7 classroom paraprofessional positions, 2 parent trainers (paraprofessionals), and 2 resource teachers. Thirty-two tax-levy teachers at the schools participated as well. Teacher and paraprofessional training was accomplished through workshops and classroom supervision and assistance. In addition, the program collaborated with Hunter College and Lehman College of the City University of New York to provide college-approved professional development courses to participating bilingual teachers and paraprofessionals.

II. THE PROGRAM

Program Goals

The primary objective of Project SABE is to improve the linguistic and computational performance of participating limited English proficient (LEP) and English dominant students. In order to achieve this objective, a number of instrumental goals were established for the project year, including:

1. To use the students' native language as a means of instruction so that students will be able to participate effectively in the learning process.
2. To develop parallel English and Spanish language skills so that students will develop bilingual proficiency.
3. To develop a cadre of trained teachers and paraprofessionals who will be able to promote positive student self-image as well as cognitive development.
4. To present workshops which will provide the parents with skills to promote meaningful learning experiences that will complement regular classroom activities.
5. To continue the development and experimental use of four educational manuals which will be produced and disseminated at the completion of the fifth year of the funding cycle. One manual will be prepared in each of the areas of administration, instruction, teacher and paraprofessional training, and community and parental involvement in bilingual education.

Program Administration

Project SABE is headed by a project director who has overall responsibility for all aspects of administration and supervision of the instructional, training, and fiscal components. He has eleven years of teaching and administrative experience in the New York City School System. He possesses New York State certification as a School Administrator and Supervisor and has headed Project SABE since its inception.

The assistant director, who assumed that position during the current school year, can be called upon to assist the director in all administrative matters but has major responsibilities in the coordination of pupil services, in teacher and paraprofessional training, and the development and supervision of the parental involvement activities. She has had a good deal of experience in curriculum development and teacher training as well as classroom experience at the elementary level and in Spanish language instruction.

Both the director and assistant director are bilingual in English and Spanish.

Site Selection

The six school sites which housed the program during the 1979-80 school year were unchanged from the prior year. These schools were selected based upon recommendations of the CSD superintendents, district supervisors of bilingual education, and parent advisory committees. In the case of the participating non-public school, the recommendation of Office of Non-Public Schools and its advisory committee was obtained.

Each of the selected school districts (the non-public school is geographically located within the borders of CSD #4 in Manhattan), has a similar ethnic, racial and socio-economic composition. They are composed primarily of Hispanic (Puerto Rican, Dominican, and Cuban) and Black American students. These school districts have the highest percentage of Hispanic students and are among the lowest in socio-economic level in New York City.

Table I presents the participating sites, and shows the grades served, as well as the number of classes participating in each grade.

Articulation with a variety of administrative units is an important aspect of project administration and development. The project director and assistant director regularly communicate with key members of the participating community school districts, including the superintendent, deputy superintendent and/or administrative assistant, director of bilingual education, teacher trainers, school principals, and curriculum specialists.

The project director also maintains frequent contact with the directors of bilingual education at Hunter College and Lehman College in order to provide feedback from project teachers and paraprofessionals, to make recommendations for revision of courses, or to suggest new course offerings. The program staff also collaborates with other resource and training units within the Office of Bilingual Education, and with the New York State Education Department's Bureau of Bilingual Education to provide training workshops and conferences.

TABLE I

Districts, Schools and Classrooms Participating in Project SABE, 1979-1980

District	Participating Schools	Grade	Number of Participating Classrooms
4 Manhattan	CS 121	K	1
		1	1
		2	1
		3	1
		4	1
		5	1
7 Bronx	CS 5	1	2
		2	1
		2/3	1
		3	1
		4	1
		5	1
	CS 65	1	2
		2	1
		3	1
		4	2
		5	1
12 Bronx	CS 44	2/3	1
		4	1
		4/5	1
	CS 92	1/2	1
		3/4	1
		4/5	1
Non-Public	St. Paul	K	1
		1	1
		2	1
		3	1
		4	1
		5	1

Program Activities

A variety of activities including orientation workshops, training sessions, field observations, supervisory visits, and community involvement activities are employed in order to bring about the achievement of the program goals listed above. These activities will be described in the following sections.

Instruction. Instructional activities are geared toward the development of improved skills in reading, writing and mathematics, as well as the enhancement of students' attitude toward learning. Instruction in skill areas and in major subjects is offered in both English and in Spanish. The social studies curriculum has been enriched to include comparative and multicultural perspectives. The Program also focused on the development and nurturing of a positive self-concept through the study of the students' native cultures.

In four of the six school sites, classes have been organized with at least a single participating class unit for each grade from grade one through five. As Table I indicates, in both Community School (CS) 121 within CSD #4 and in the St. Paul School there is a single class per grade, including kindergarten. At CS5 and CS65 within CSD #7, where there are no project SABE kindergarten classes, some grades contain more than a single class. On the other hand, the two schools within CSD #12 (CS44 and CS92) each house only three Project SABE classes. Consequently, most of these classes contain students from two consecutive chronological grades.

The Project SABE classroom paraprofessionals have generally been assigned on the basis of one per school -- the exception being CS121

where two paraprofessionals are assigned. In general, the paraprofessionals assist in the instructional process by providing individual or small group instruction while the classroom teacher is working with another group. At the St. Paul School, the paraprofessional works alone in a tutorial setting and students are pulled-out of regular classes to receive intensive Spanish language instruction from the paraprofessional.

Orientation Workshops. During the first weeks of the 1979-80 school year, a series of orientation sessions for staff were held.

The Project SABE administrative staff conducted one staff orientation session at each of the six participating schools. The agendas for these meetings included a description of the a) complete instructional program, b) services and schedules of the paraprofessionals, c) functions of the Bilingual Resource Teacher, d) site visits by the Director and Assistant Director, e) pretest schedules and materials, f) procedures for ordering materials with Project funds, and g) procedures to be followed by those taking SABE funded courses at Hunter College during the fall 1979 semester.

A separate meeting with a similar agenda was held at each of the three community school districts served by Project SABE.

Sample agendas are included as Appendix A.

Because it was possible to assemble the paraprofessionals as a group, a separate orientation and training session was conducted at the central offices for all of the project's paraprofessionals. In addition to facilitating the handling of administrative matters, this set up the procedure for the regular monthly paraprofessional training sessions.

In-Service Workshops and the Role of the Resource Teacher. Two of the funded positions that have not as yet been discussed are those of the resource teachers (teacher/paraprofessional trainers). These individuals were charged with the responsibility of developing teaching materials, providing teaching demonstrations, observing classroom lessons and activities, conducting small group seminars and providing general on-the-job assistance and training to project teachers and paraprofessionals. In general, they each spent two days per week in the project office developing materials and taking care of administrative matters and one full day per week at each of their three assigned school sites.

In-service training in the form of meetings or workshops is offered to participating teachers in the schools, or on a district basis. This training is offered on-site by the resource teachers on a regular basis.

Staff Development

Data were supplied on the extent of professional, college level education courses funded through Project SABE. Over the four project years, thirteen current teachers had been funded for one or two courses and thirteen others had earned between nine and thirty credits. Other teachers funded by the program earned an approved Master's Degree. Three paraprofessionals earned an approved Bachelor's degree funded by the program.

Staff Experience in Project SABE

The project director voiced a concern with the loss of staff by their movement to positions of greater responsibility outside of SABE. This has probably had the greatest impact on two resource teachers, each

of whom was on the first year of assignment. The classroom teachers and the paraprofessionals had generally continued with Project SABE for a longer period of time. More than half of the teachers were in either their third or fourth year; about a third were in their second year, and about fifteen percent were in their first year. Two-thirds of the paraprofessionals had been in the program for three or four years; the remainder all had joined SABE prior to the year under study.

Table II presents the experience of Project SABE teachers in the project, by site.

TABLE II

Teacher Experience in SABE
by School

School	Project Experience (Years)	
	1 or 2	3 or 4
CS 121	3	3
CS 5	2	5
CS 65	2	5
CS 44	2	1
CS 92	2	1
St. Paul	4	2

Community and Parental Involvement. Two of the nine funded paraprofessional positions were dedicated to the function of parent trainers. Regular weekly meetings were scheduled during the daytime and advertised at each of six school sites. The purpose of these sessions was to conduct educational and vocational workshops and to relate parent acitivities to the activities of their children in school. In this way parents could become actively and meaningfully involved with their children in school

assignments. Not only would student skills be reinforced but it was hoped that students would see the value that their parents placed on their education.

Another way in which community involvement was established and maintained was by holding an evening orientation for parents at each school site. It was hoped that this would enable working parents to become more involved in the project.

Field Observation and Supervision. In addition to the informal classroom observations conducted by the resource teachers and the assistant director, the director also observed project teachers and paraprofessionals.

The assistant director generally visited each school two to three times per month. The director also visited each teacher and paraprofessional during the school year. It should be pointed out that formal authority for supervisory observations resides with each individual principal. Accordingly, observations by Project SABE staff were informational and advisory.

III. EVALUATION ACITIVITIES AND FINDINGS

Site Visits and Field Interviews

The evaluation design for the project included provision for field visits so that the evaluator could visit classrooms and parent workshops, and meet with teachers, paraprofessionals and school administrators. However, delays in processing of evaluation budgets resulted in the rather late assignment of the project's evaluator. As a result, this evaluator's first contact with Project SABE staff was after the middle of May, 1980, when a meeting with the assistant director was held. After that meeting, arrangements were made to visit each of the sites. A number of subsequent meetings with the project director were also held.

Because of the short amount of time remaining in the school year, it was only possible to visit each site one time. Furthermore, it was not possible to meet with the responsible administrator in each case because of their prior commitments. Nonetheless, this evaluator did have the opportunity to meet with three principals and one bilingual coordinator at different sites.

The findings presented here reflect these meetings, discussions with teachers, and observations made of classes and parental workshops. Variations in the administrative climate from school to school were remarkable. In two of the schools, in interviews, the principals expressed their opposition to the concept of bilingual education. They favored instruction in English with Spanish to be taught as a second language. While they had accepted the services made available through Project SABE, they were not desirous of having a continuation of the project beyond its

scheduled completion date of August, 1981. On the other hand, the administration in two other schools strongly advocated bilingual education and this was clearly reflected in the way that classroom instruction was conducted. The two schools at which it was not possible to meet with the principal were clearly much closer in philosopy to the latter schools than to the former ones. (This was indicated in discussions with teachers and in observing the conduct of instruction.)

The impact of the administrative climate upon teacher morale and student performance had not been identified for study. However, it would be hard to imagine that teacher and pupil performance would be independent of it. In the schools where administrative support was positive, the number of Project SABE classes and their enrollments were higher. (See recommendations for future evaluations)

The use of paraprofessionals in the instructional process was judged to be quite effective. Some worked with groups independently of the teacher while others assisted in large group activities. Some teachers expressed the strong desire for more continuous paraprofessional assistance in their rooms. This, in itself, suggests their overwhelmingly positive contribution.

Visits to the schools were scheduled so that observation of the parental involvement component could also be undertaken. The group that were visited were completing a variety of handicraft projects and showed evidence of remarkable spirit. Nonetheless, the groups observed were relatively small (ranging from about 5-8 in size). (It is unfortunate that at one school, one ethnic group of parents was reported by staff members to feel sufficiently "out-of-place" by the school's administration

that they absented themselves from participation*. As Hispanic parents were not observed at the school, closer attention to this component is recommended in the future (see Recommendations).

Teacher/Paraprofessional Questionnaire

As a result of discussions with the project director, assistant director, teachers, paraprofessionals and with non-Project SABE administrators in participating schools, a special "Teacher/Paraprofessional Questionnaire" was developed (see Appendix B). The instrument was designed to obtain information on staff experience, educational advancement since joining the Project, attendance at and rating of Project workshops, assessment of the quantity and quality of the special learning materials developed by the resource teachers, frequency of visits by Project SABE central staff, and an assessment of the attitudes of non-SABE school staff towards the Project and towards bilingual education in general.

The instrument was mailed to teachers and paraprofessionals at their schools during the second week of June. A stamped, pre-addressed return envelope directed to the project evaluator was supplied. No provision could be made for following-up of non-respondents, as the staff members could not be contacted once the schools were closed.

Unfortunately, the questionnaire return rate was disappointingly low. Responses were obtained from only 14 (36 percent) of the 39 class-

*Staff members expressed the feeling that the negative attitude of the principal towards the Hispanic parents was having an effect on parental participation at the site.

room staff. When the available questionnaire data were compared with those supplied by the Project SABE office, it was apparent that newer teachers in the program were underrepresented in the group that responded to the questionnaire. As the number of respondents was small, it was felt that they might not be representative of participating teachers and paraprofessionals. As a result, it was decided not to present the data in tabular form. A brief summary of the outcomes follows.

Outcomes, Teacher/Paraprofessional Questionnaire

The forms that were returned have been analyzed separately for teachers and paraprofessionals. The data suggest that the paraprofessionals typically attended all or nearly all of the monthly workshops and rated them as being extremely helpful. On the other hand, the typical responding teacher had attended only two or three workshops and found them to be moderately or somewhat helpful. Teachers also commented that it would be most helpful if more classroom teaching materials could be supplied. The project director indicated to the evaluator that one grade is targeted each year and is supplied with a great deal of material. During this year it was the fifth grade, and in 1980-81 it will be the sixth grade.

Standardized Testing

In order to gauge the extent of student achievement during the academic year, standardized tests of English and Spanish reading and mathematics were administered on a pretest/posttest basis. The tests were selected from among those available in the Cooperative Inter-American (CIA) Series published by Guidance Testing Associates.

Achievement in the development of English language skills was measured using the CIA-Oral Language Proficiency Test for beginning readers and the CIA-Test of Reading (Level I, II or III) for more advanced readers. Similarly, the CIA-Prueba de Comprension del Lenguage Oral and one of the three levels of the CIA-Prueba de Lectura were used to assess Spanish oral proficiency and reading achievement. In mathematics, the subtest of the CIA-General Ability test (Level I, II or III) was administered to English dominant students and the Spanish version was administered to Spanish dominant students.

Changes in student performance were tested for statistical significance and educational significance according to guidelines established by the New York City Board of Education's Office of Educational Evaluation:

1) Statistical Significance was determined through the application of the correlated t-test model. This statistical analysis demonstrates whether the difference between pre-test and post-test mean scores is larger than would be expected by chance variation alone; i.e. is statistically significant. This analysis does not represent an estimate of how students would have performed in the absence of the program. No such estimate could be made because of the inapplicability of

test norms for this population, and the unavailability of an appropriate comparison group.

2) Educational Significance was determined for each grade level by calculating an "effect size" based on observed summary statistics using the procedure recommended by Cohen.[1] An effect size for the correlated t-test model is an estimate of the difference between pre-test and post-test means expressed in standard deviation units freed of the influence of sample size. It became desirable to establish such an estimate because substantial differences that do exist frequently fail to reach statistical significance if the number of observations for each unit of statistical analysis is small. Similarly, statistically significant differences often are not educationally meaningful.

Thus, statistical and educational significance permit a more meaningful appraisal of project outcomes. As a rule of thumb, the following effect size indices are recommended by Cohen as guides to interpreting educational significance (ES):

a difference of 1/5 = .20 = small ES

a difference of 1/2 = .50 = medium ES

a difference of 4/5 = .80 = large ES

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[1] Jacob Cohen. Statistical Power Analysis for the Behavioral Sciences (Revised Edition). New York: Academic Press, 1977 Chapter 2.

Students were scheduled for testing according to the following design:

Reading in English -

All English dominant students in grades K-5

Spanish dominant students in grades 4-5

Reading in Spanish -

All Spanish dominant students in grades K-5

Mathematics -

All students in grades 1-5

Before considering mean changes in student performance, the number of students in each testing category and the number for whom pre- and post-test scores were available will be compared. These data are displayed in Table III.

TABLE III

Comparison of Register Data and Number for Whom Pretests and Post-tests Were Available

Test type	Student groups	Number on Register	Number of Test scores analyzed	Percentage analyzed
English reading	English dominant in grades K-5	250	171	68.4
	Spanish Dominant in grades 4-5	311	231	74.3
	Subtotal	482	348	72.2
Spanish Reading	All Spanish dominant Students in grades K-5	978	602	61.6
Mathematics	All students in grades 1-5	926	662	71.5

The percentage of students for whom scores were available ranged from 61.6 to 74.3. Alternatively stated, the scores of about three to four out of ten students were not available for analysis.

Table IV shows the mean group performance by grade and test level on the English language tests. Statistics have been computed for each grade grouping within test level. In each case, the number of students as well as the mean pre- and post-test scores (in raw score units) accompanied by their corresponding standard deviations are presented. These are followed by the actual gain (difference between the mean post-test and the mean pre-test scores) shown by the group and the associated t-statistic as outlined above. The last figures in the table report the pre-post correlation (r), degrees of freedom (df), probability (p), and educational significance (ES) of the group's performance. For this table, all of the findings were statistically significant (in most cases beyond the .001 level). The mean scores of the Spanish dominant students reached a moderate level of educational significance while those of the English dominant students were in the high range.

The Spanish language test performance of student participants is presented in Table V. Here too, the results for each grade grouping by test level reached statistical significance. In nearly all cases, the ES statistic was in the low to moderate range. The single exception to this occurred among the fifth graders, whose performance was in the high range. See Table V for a more detailed analysis of these outcomes.

In mathematics, students in grades one through five were scheduled for testing. The mathematics test data are summarized in Table VI. In nearly all cases, the gains were significant at or beyond the .001 level.

The educational significance scores were in the moderate to high range.

As indicated earlier, it is difficult to properly assess achievement gains without having norms such as grade equivalents, percentiles or standard scores available. Nonetheless, the data in Tables IV, V and VI permit some year-to-year comparison to be made. This can be done by looking at the performance of students in consecutive grades on the same test level. For example, consider the GA-2 level mathematics performance of Spanish dominant students in grades 2 and 3. The second grade students had mean pre- and post-test scores of 9.61 and 13.64 respectively, while the corresponding scores for third graders were 14.68 and 16.88. One can argue that the mean pretest score for third graders is a benchmark against which the end-of-year performance of second graders can be assessed. (Since some loss in the summer months might be expected, the post-test for the lower grade could be expected to be somewhat higher than the higher grade's pretest.)

It is necessary to exercise some care in interpreting data in this format for it is often the case that those in a lower grade who take the same level test as those in a higher grade are relatively more able. However, a comparison of pretest scores enables one to control for such initial differences. An example of this is seen in the HG-3 level mathematics performances of Spanish dominant students. In this instance, the mean pretest score of 16.53 for third grade students exceeds the pre-test scores of the fourth and fifth graders. Obviously intergroup comparisons involving the third grade would be invalid. On the other hand, the between group comparison of fourth and fifth graders suggests that fourth graders made adequate progress when gauged against fifth grade pretest scores.

A similar analysis of the remaining mathematics scores as well as the Spanish language and English language scores shows that, in nearly all cases, the pre-test performance of the upper grade exceeded the post-test level of the preceding lower grade. In some measure, this suggests that student exposure to language over the summer may result in continued development over that period, rather than a loss of skills.

Given these varied outcomes, it would be helpful to document student growth over time, to better delineate the rate and shape of student progress (see recommendations on longitudinal data collection).

Tables IV, V and VI present student outcomes in tabular form, and detailed interpretations of the data.

TABLE IV

English Reading Achievement

Analysis of 1979-80 School Year Performance
by Language Dominance, Test Level and Grade

Language Dominance	Test Level	Grade	Number	Pretest Mean	Pretest SD	Posttest Mean	Posttest SD	Mean Difference	t Value	r	df	p	ES
English	OC-1	K	18	23.56	4.51	29.67	3.24	6.11	11.04	.87	17	.001	2.6[illegible]
	R-1	1	33	33.91	16.83	44.27	16.55	10.36	5.79	.94	32	.001	1.01
	R-2	2	21	43.24	15.80	53.52	13.77	10.29	6.46	.96	20	.001	1.41
		3	11	72.64	13.40	79.27	12.25	6.64	3.38	.88	10	.01	1.01
		Subtotal	32	53.34	20.50	62.38	18.03	9.03	7.14	.94	31	.001	1.26
	R-3	4	29	36.48	13.86	43.14	13.69	6.66	8.62	.95	28	.001	1.60
		5	5	47.80	13.85	62.14	12.96	14.20	4.04	.83	4	.05	1.81
		Subtotal	34	38.15	14.24	45.91	15.01	7.76	8.33	.93	33	.001	1.43
Spanish	R-3	4	123	26.81	12.22	32.30	12.72	5.49	7.35	.78	122	.001	0.66
		5	108	41.58	16.38	50.06	16.64	8.48	8.15	.79	107	.001	0.78
		Subtotal	231	33.72	16.08	40.61	17.14	6.89	10.86	.83	230	.001	0.71

A discussion of these outcomes appears on the following page.

Discussion, Table IV

As may be seen in Table IV, English-dominant students in grades K - 3 all made gains in English which were both statistically and educationally significant at a high level. Kindergarten students made significant raw score gains of 6.11 points from pre- to post-test in oral comprehension of English. First grade students achieved gains of 10.36 points on level 1 of the Interamerican Test of Reading in English. Second and third graders, tested with level 2 of the Test of Reading, made average gains of 10.29 and 6.64 points, respectively. Taken as a group, students in these grades achieved gains which were judged to be highly educationally significant.

Fourth and fifth graders were tested with level 3 of the Interamerican Test of Reading, scoring average pre- to post-test gains of 6.66 and 14.20 points, respectively. Both were judged to be of great educational significance.

Spanish-speaking fourth and fifth graders were tested with level 3 of the Interamerican Prueba de Lectura, achieving average pre- to post-test gains of 5.49 and 8.48 points. The gains were statistically significant at or below the .001 level, and were judged to be of medium to large educational significance.

TABLE V

Native Language Reading Achievement

Analysis of 1979-80 School Year Performance
by Test Level and Grade

Language Dominance	Test Level	Grade	Number	Pretest Mean	Pretest SD	Posttest Mean	Posttest SD	Mean Difference	t Value	r	df	p	ES
Spanish	CO-1	K	23	25.30	8.01	27.48	4.80	2.17	1.75	.67	22	.05	0.36
		1	25	23.64	11.54	37.64	21.49	14.00	3.95	.57	24	.001	0.79
		Subtotal	48	24.44	9.94	32.77	16.52	8.33	3.96	.49	47	.001	0.57
	L-1	1	87	23.37	14.30	35.60	23.24	12.23	7. 05	.73	86	.001	0.76
	L-2	2	114	33.39	14.45	40.69	16.49	7.56	8.13	.80	113	.001	0.76
		3	123	52.73	17.65	55.42	20.25	2.69	2.17	.75	122	.05	0.20
		Subtotal	237	43.43	18.84	48.46	19.87	5.03	6.32	.80	236	.001	0.41
	L-3	4	121	28.21	11.44	36.46	15.43	8.26	8.33	.71	120	.001	0.76
		5	109	41.71	23.30	53.33	25.24	11.62	11.55	.91	108	.001	1.11
		Subtotal	230	34.60	19.25	44.46	22.28	9.85	13.81	.87	229	.001	0.91

A discussion of these outcomes appears on the following page.

Discussion, Table V

Table V presents the achievement of Spanish-speaking students in Spanish language skills. Students in kindergarten, and some of the first graders, were tested with the Interamerican Series, Test of Oral Comprehension in Spanish. Students in kindergarten achieved raw score gains of 2.17 points from pre- to post-test, which were statistically significant at the .05 level and were of small educational significance. The outcomes for the kindergarten students (a small pre-post gain, low score ranges and small standard deviations) suggest that there was insufficient differentiation among students, who appear to be functioning at the floor of the test. Therefore, the outcomes should be interpreted with caution. First graders tested with the same instrument made average gains of 14.00 points from pre- to post-test, which were highly statistically and educationally significant. The outcomes suggest that the population tested is a complex one, with some students making gains at the lower range of the test, and others scoring at higher levels.

First graders with better-developed reading skills were tested with the Prueba de Lectura, level 1. They scored a mean gain of 12.23 raw score points from pre- to post-test, which was significant below the .001 level, and was of moderate educational significance.

Second and third graders were tested with level 2 of the Prueba de Lectura. Second graders made gains which were statistically significant below the .001 level, and were moderately educationally significant.

Discussion, Table V (continued)

Third graders achieved average pre- to post-test gains of 2.69 points. Possibly because of the large number of students reported, this gain was statistically significant at the .05 level, and was judged to be of small educational significance. The small pre- to post-test gain and increasing standard deviations suggest that the student population being tested may be a complex one, with the possibility of a group of students functioning at the ceiling of the test, while another group may be making progress which is adequately measured by this level of the test, but is masked by the students performing at the upper range of the test. It is suggested that, if this level of the instrument is used for these students in the future, the data be analyzed by quartiles to better determine if the distribution of scores is indeed bimodal. The possibility that some third graders be tested with a higher level of the test should also be considered in light of the outcomes of the recommended quartile analysis.

Fourth and fifth graders were tested with level 3 of the Prueba, and achieved raw score gains of 8.26 and 11.55 raw score points from pre-test to post-test, respectively. Both gains were statistically significant below the .001 level, and were of moderate to great educational significance.

TABLE VI

Mathematics Achievement

Analysis of 1979-80 School Year Performance
by Language Dominance, Test Level and Grade
(Number or Computation Subtests)

Language Dominance	Test Level	Grade	Number	Pretest Mean	Pretest SD	Posttest Mean	Posttest SD	Mean Difference	t Value	r	df	p	ES
Spanish	HG-1	1	106	9.69	3.19	11.73	3.09	2.04	8.02	.65	105	.001	0.78
	HG-2	2	107	9.61	4.79	13.46	5.46	4.03	11.44	.75	106	.001	1.10
		3	108	14.68	7.55	16.88	8.05	2.20	6.06	.98	107	.001	0.58
		Subtotal	215	12.15	6.80	15.27	7.06	3.11	11.97	.85	214	.001	0.82
	HG-3	3	17	16.53	6.57	18.76	6.63	2.24	6.84	.98	16	.001	1.66
		4	111	11.27	4.88	13.76	4.42	2.49	5.94	.55	110	.001	0.56
		5	110	12.77	5.85	17.72	5.92	4.95	13.76	.79	109	.001	1.31
		Subtotal	238	12.34	5.62	15.95	5.70	3.61	13.39	.73	237	.001	0.87
English	GA-1	1	40	12.03	3.15	13.53	2.52	1.50	5.55	.84	39	.001	0.88
	GA-2	2	21	11.05	2.22	16.05	3.22	5.00	7.77	.46	20	.001	1.69
		3	13	19.23	3.32	20.85	3.31	1.62	2.24	.69	12	.05	0.62
		Subtotal	34	14.18	4.83	17.88	3.98	3.71	6.66	.74	33	.001	1.14
	GA-3	4	25	13.28	3.41	16.00	3.00	2.72	7.90	.86	24	.001	1.58
		5	4	19.25	3.20	21.25	2.87	2.00	2.83	.90	3	.05	1.42
		Subtotal	29	14.10	3.93	16.72	3.46	2.62	8.41	.90	28	.001	1.57

Discussion, Table VI

Spanish-dominant students were tested in mathematics with the Interamerican Series Tests of General Ability (Spanish version). For levels 1 and 2, the number (numero) subtest was administered, and the computation subtest was administered for level 3, thus resulting in restricted score ranges of 0-15 points on level 1, 0-20 on level 2, and 0-23 points on level 3.

Students in grade 1 were tested with level 1, and achieved a mean gain of 2.04 raw score points from pre- to post-test. The gain was statistically significant below the .001 level, and was determined to be of great educational significance.

All second and most third grade students were tested with the number subtest of level 2 of the Test of General Ability. The mean achievement at pre-test was 9.61 raw score points for the second graders and 14.68 points for the third graders. Post-test means were 13.46 points and 16.88 points, respectively. Thus, second graders achieved a mean gain of 4.03 points, while third graders scored a gain of 2.20. Both gains were determined to be statistically significant below the .001 level. The achievement of the second graders was judged to be highly educationally significant, while that of the third graders was of moderate educational significance.

A small number of third graders, and all students in the fourth and fifth grades were tested with level 3. Achievement at pre-test ranged from 11.27 points (grade 4) to 16.53 raw score points (grade 3). Scores at post-test ranged from 13.76 (grade 4) to 18.76 (grade 3), with mean gains ranging from 2.24 in grade 3 to 4.95

in grade 5. All the gains were judged to be significant below the .001 level. Students in the third and fifth grades made gains which were judged to be of great educational significance, while the fourth graders showed improvement which was judged to be of moderate educational significance.

English-dominant first graders were tested with the English version of the Test of General Ability, level 1. The group achieved a mean gain of 1.50 raw score points from pre- to post-test, which was determined to be statistically significant below the .001 level, and of high educational significance. This finding should be taken with some caution, since the level of significance found may be at least partially a product of sample size, small standard deviation of the distribution, and the high correlation between the performance of students at pre- and post-test.

Second and third graders who were dominant in English were tested with level 2 of the same instrument. At pre-test, achievement ranged from a mean of 11.05 at the second grade to a mean of 19.23 for the third grade. Students in second grade achieved a mean gain of 5.00 raw score points from pre- to post-test, while third graders averaged a gain of 1.62 points. The performance of the second graders was found to be statistically significant below the .001 level, and of great educational significance, while the small gain reported for the third graders was found to be statistically significant below the .05 level. This level of performance, however, appears to be at the ceiling of the subtest used, thus restricting the range of student achievement.

Discussion, Table VI (continued)

Fourth grade students were tested with level 3 of the Test of General Ability, achieving a mean gain of 2.72 points from pre- to post-test. This gain was determined to be statistically significant below the .001 level, and highly educationally significant. The high ES rating, however, may be partially due to the small size of the standard deviation of the distribution of scores. The small number (N=4) of fifth grade students tested were achieving at the ceiling of the test, making gains of 2.00 raw score points from pre- to post-test. The small (and decreasing) standard deviations further suggest that these students were functioning at the top of the test at pre-test, and hence could not demonstrate much growth. This level of the test clearly appears to be too easy for this group of students.

It appears that the reliability of the instrument is low due to the restricted range of items. As the limited number of items are not criterion-referenced, the instrument may not be optionally congruent with the curriculum, therefore limiting the ability of students to exhibit growth on the test. It is suggested that an alternative instrument be selected (See Recommendations).

IV. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

Project SABE has functioned for four years as a program to develop linguistic and computational skills of limited English proficient and English dominant students in three community school districts. Through the participation of classroom teachers and paraprofessionals, instructional services are provided to the target students. To facilitate the development of the target population, Project SABE provides supportive services to students and in-service training for the instructional staff. As a mature program, Project SABE has contributed materials to participating teachers and paraprofessionals in almost all the elementary grades. Student outcomes, as revealed by the results of examinations given on a pre- and post-test basis, have been generally statistically and educationally significant. Another indication of the maturity of the program is the fact that most of the participating instructional staff has been with the project for more than three years, lending consistency to the implementation of the program.

On the other hand, visits to schools and discussions with staff also suggested that the philosophy of or approach to bilingual education may vary considerably from site to site, with possible implications for the implementation of the program at those sites.

Given the above discussion, the following recommendations are offered:

B. Recommendations

1. Student Performance. Given the availability of several years of student achievement data on comparable instruments, it is recommended that the program establish a longitudinal test database so that year-to-year and long-term growth of student participants can be traced. As appropriate publisher-

supplied norms are not available for this student population, this would permit the construction of local norms for the assessment of student achievement. In addition, as student rates of learning are not linear, especially in the English development of LEP students, longitudinal documentation of achievement would provide a more sensitive measure of growth.

It is also recommended that the program establish procedures for the collection of uniform attendance data and include attendance criteria among its objectives.

Given the number of students for whom achievement data were not reported, it is recommended that the program attempt to follow up on those students, and make an effort to supply as complete data as possible on the students who participated in the program. More complete information on the characteristics of students being served should make the interpretation of student outcomes more meaningful.

The results of student outcomes in mathematics indicate that the subtest being used to assess student growth is not reliable because of the limited number of test items. The restricted range limits the ability of students to demonstrate growth on the test, masking actual student learning. It is recommended that the program consider an alternative instrument, such as the Comprehensive Test of Basic Skills or the California Achievement Test (available in Spanish), which test a greater range of abilities.

2. School Climate. It is recommended that future evaluations examine school climate factors, including approaches to or philosophies of bilingual education held by the administration at the various sites. The possible impact of such factors on the implementation of the program should be considered, as

well as the possibility of selecting alternative sites in future years for those schools where local goals conflict with project objectives.

As school climate factors do vary, and may have implications for student performance, it is recommended that a subanalysis of the student outcomes be performed by site on an experimental basis.

3. Staff Training and Staff Characteristics. Given the late administration of the staff questionnaire and the difficulty of follow-up on missing responses, it is recommended that a staff questionnaire/needs assessment be conducted early in the year to gather information in the area of teacher characteristics and needs. In addition to serving evaluation purposes, the instrument should be useful in assisting in the planning of staff development activities.

It is recommended that an effort be made to see that funded college level courses are available to staff on a more equal basis. At present, there is considerable variation in the distribution of courses taken.

4. Parental Involvement. The evaluator was able to observe only a few of the parent workshops offered. Although the number of attending parents tended to be small, the groups observed were enthusiastic. Despite the difficulty of encouraging parents to participate, this component has been well-received, and its expansion is strongly recommended. Joint sessions with parents and children might be an additional way of intensifying parental participation.

5. Program Implementation. It is hoped that the program will provide more complete documentation of activities in 1980-81, to more adequately and sensitively reflect the program's scope of work and its achievements over the funding period. For example, a resource file could be maintained on an on-

going basis, containing drafts of manuals, agendas of meetings, summaries of staff characteristics, and other information.

6. Dissemination. It is hoped that the program will facilitate the sharing of materials and curricula developed during the years of the funding period, either through the Evaluation and Dissemination Assistance Center (EDAC) or other dissemination sources. New programs would benefit from Project SABE's experience, effort and commitment.

7. Evaluation. Finally, it is recommended that the 1980-81 evaluation of Project SABE focus on the evolution of the program over its funding cycle. Possible areas of interest would include student outcomes over time, staff characteristics, methods and materials developed, and parental involvement, as well as the interaction of site characteristics with the implementation of the program.

APPENDICES

APPENDIX A

BOARD OF EDUCATION OF THE CITY OF NEW YORK
Office of Bilingual Education
PROJECT SABE
SYSTEMATIC APPROACHES TO BILINGUAL EDUCATION
66 COURT STREET, BROOKLYN, N.Y. 11201 - ROOM 908
TELEPHONES 596-6366 - 596-6367

Awilda Orta
Director

LISANDRO GARCIA-MARCHI
DIRECTOR
Gladys A. Ramírez
ASSISTANT DIRECTOR

RE: Meeting with Parent Trainers

DATE: Friday, November 30, 1979

PLACE: Project SABE Office
66 Court Street, Rm. 908
Brooklyn, NY 11201

TIME: 2:00 P.M.

AGENDA

1. Paraprofessional Workshop
2. Parental Involvement Activities
3. Project SABE Orientation Meetings

   Place: Saint Paul
   Parents Room

   DATE: December 4, 1979

   TIME: 9:30 A.M.

   PLACE: Community School 5
   Parents Room

   DATE: December 12, 1979

   TIME: 9:00 A.M.

4. Parents Advisory Committee
5. Monthly Report, logs, payroll
6. Schedule of Activities
7. Projected Activities

BOARD OF EDUCATION OF THE CITY OF NEW YORK
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SYSTEMATIC APPROACHES TO BILINGUAL EDUCATION
65 COURT STREET, BROOKLYN, N.Y. 11201 - ROOM 908
TELEPHONES 596-8366 - 596-8367

Awilda Orta
Director

LISANDRO GARCIA-MARCHI
DIRECTOR

Gladys A. Ramírez
ASSISTANT DIRECTOR

Third Project SABE Paraprofessional
Training and Orientation Session
School Year 1979-80

A G E N D A

1. Administrative matters
   a. College attendance forms
   b. Payroll forms (Please see Ms. Noemy Hernández if you owe us any forms)
   c. Request for salary increases if you qualify based on approved college credits
   d. Grades reports for the Spring and Summer 1979
2. Puerto Rican Heritage Week Activities
   a. Dates for activities at Project SABE schools
   b. Project SABE special projects by paraprofessionals
   c. Puerto Rican Educator's Association Essay Contest
3. New structure of the Office of Bilingual Education School Year 1979-80
   Mr. Lisandro García- Marchi - Project Director
4. Greetings from Ms. Awilda Orta - Director, Office of Bilingual Education
5. Workshop topic: " Como enseñar el concepto de medidas a nivel de tercer y cuarto grados"
   Presentor: Ms. Gladys A. Ramírez
   Assistant Director - Project SABE
6. Question and answer period

* * * * * * * * *

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Awilda Orta
Director

LISANDRO GARCIA-MARCHI
DIRECTOR
JUSTINO RODRIGUEZ
ASSISTANT DIRECTOR

Meeting with Project SABE
Participants at C.S. 5

DATE: September 19, 1979

A G E N D A

1. Welcome and Introductions
2. Project SABE program at C.S. 5
   a. Instructional component
   b. Language usage
   c. Reading program
3. Paraprofessional services and duties
   a. Schedule
   b. Monthly training
   c. Release time
4. Bilingual Resource Teacher Position
5. Procedure to order materials
6. School visits by Director and Assistant Director
7. Community and Parental Involvement Component
8. Teachers attending Hunter College during the Fall 1979 term sponsored by Project SABE
9. Pre-testing of students (Schedule and procedures)
10. Open - additional items for discussion

PROJECT SABE EVALUATION
Teacher/Paraprofessional Questionnaire

APPENDIX B

Name _____ School _____

____ Teacher
____ Paraprofessional } (Check one)

Grade/Class _____

1. For how many years have you been teaching at your present school?

_____

2. For how many years have you been part of Project SABE? _____

3. What is the total number of years that you have been teaching? _____

4. Describe any other related experience that you have had.

_____

_____

_____

5. What was yor highest degree and number of credits beyond the degree when you began working in Project SABE?

_____ _____ _____
Highest degree --- year number of credits beyond degree

6. What is your current degree and credit status?

_____ _____ _____
Highest degree --- year number of credits beyond degree

7. Of the college credits that you have taken, how many have been paid for with funds from Project SABE? _____

8. During the past year, how many Project SABE workshops have you attended? _____

9. What is your overall rating of these workshops?
   ____ extremely helpful
   ____ moderately helpful
   ____ of some help
   ____ of little or no help

10. To what extent have the Project SABE resource teachers supplied you with special learning materials that they have developed?
   ____ a great deal
   ____ a moderate amount
   ____ a little
   ____ not at all

11. How would you rate these resource teacher developed materials?
   ____ extremely good
   ____ moderately good
   ____ fair
   ____ poor

12. For how many class periods per week does a project SABE paraprofessional work with your class? _____ (To be completed by teachers only)

13. During the past year, about how many times have you been visited by the

    a) project director _____

    b) assistant director _____

    c) resource teachers_____

14. How does the non-SABE staff of your school feel about Project SABE?

_____

_____

_____

15. How do they feel about bilingual education in general?

_____

_____

_____

16. Are there any other comments about Project SABE that you wish to make?

_____

_____

_____